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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
20403A ASSAULT BREAKER, MISSILE NUMBER 0003, ROUND NUMBERS M564--ETC(U)  
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Mar 82

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METEOROLOGICAL DATA REPORT  
20403A Assault Breaker  
Missile Number 0003  
Round Numbers M5G4  
11 March 1982

by

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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECONOM

UNITED STATES ARMY ELECTRONICS COMMAND

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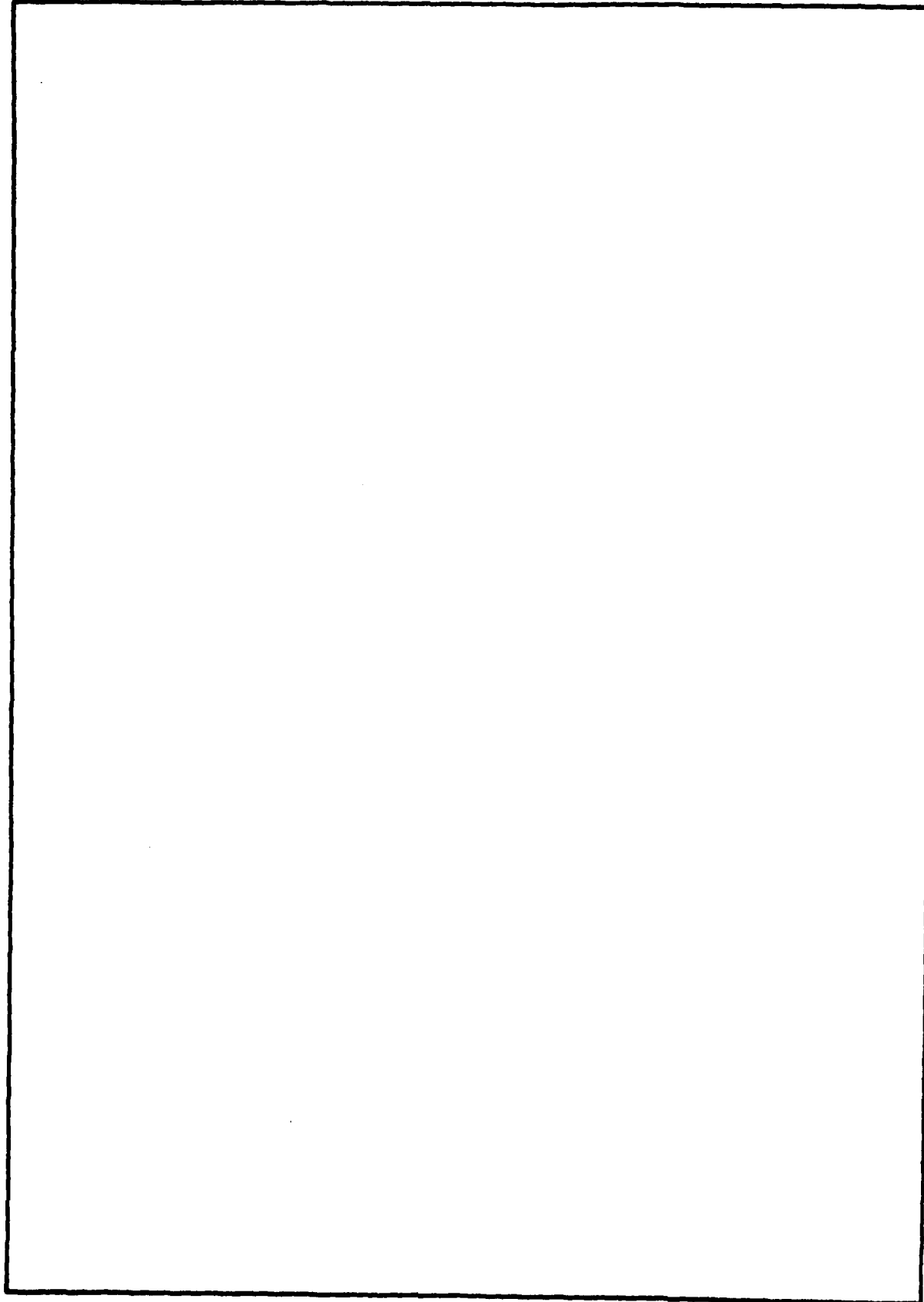
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 20403A Assault Breaker, Missile Number 0003, Round Number M5G4 presented in tabular form.		

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## INTRODUCTION

20403A Assault Breaker, Missile Number 0003, Round Number M5G4, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0827 MST, 11 March 1982. The scheduled launch time was 0800 MST.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team. Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-33 and Jallen Met Sites.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

### SITE AND ALTITUDE

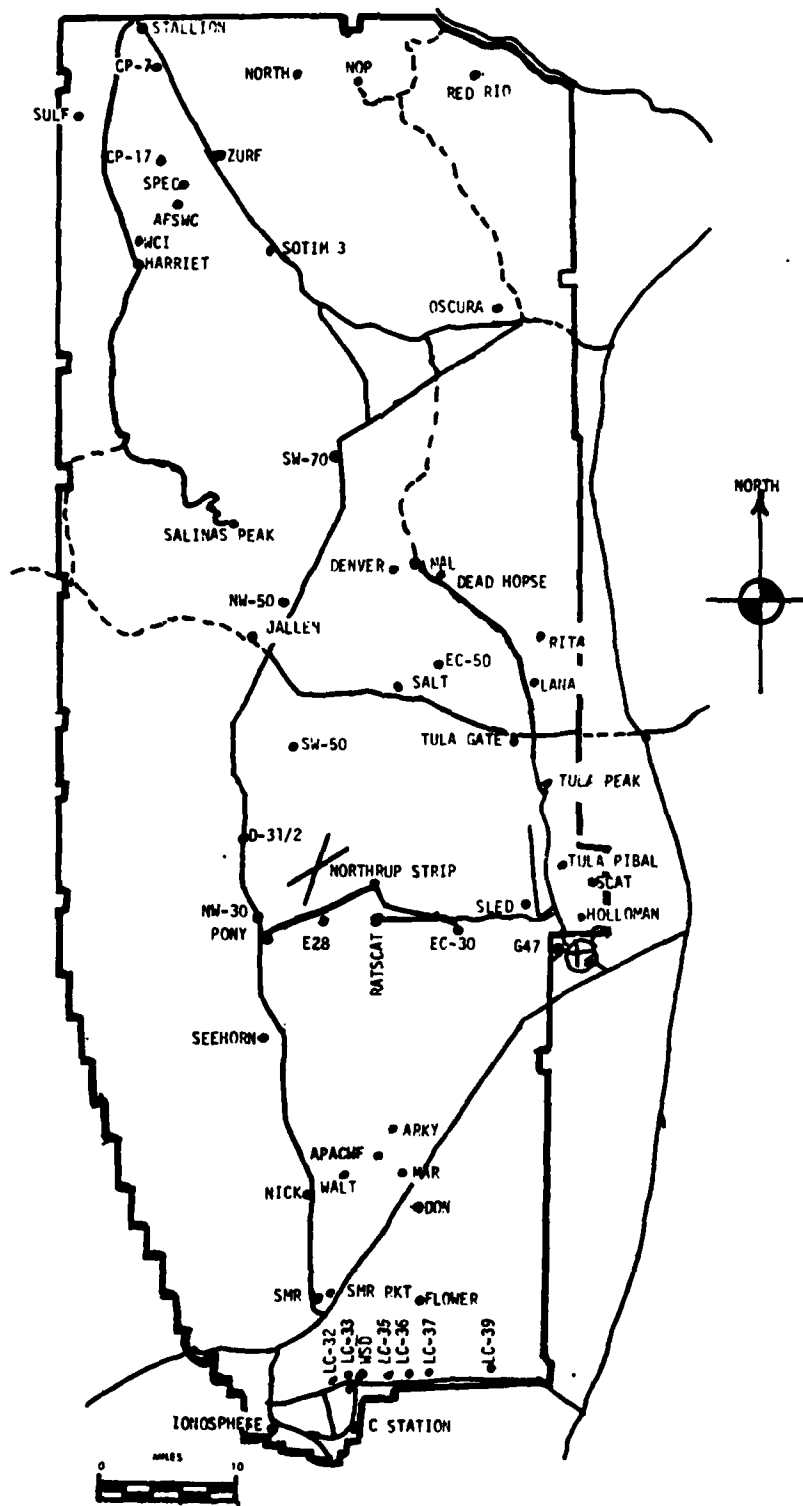
LC-33	2280 Meters
Jallen	2100 Meters
Jallen	2760 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to high as possible in 500-foot increments.

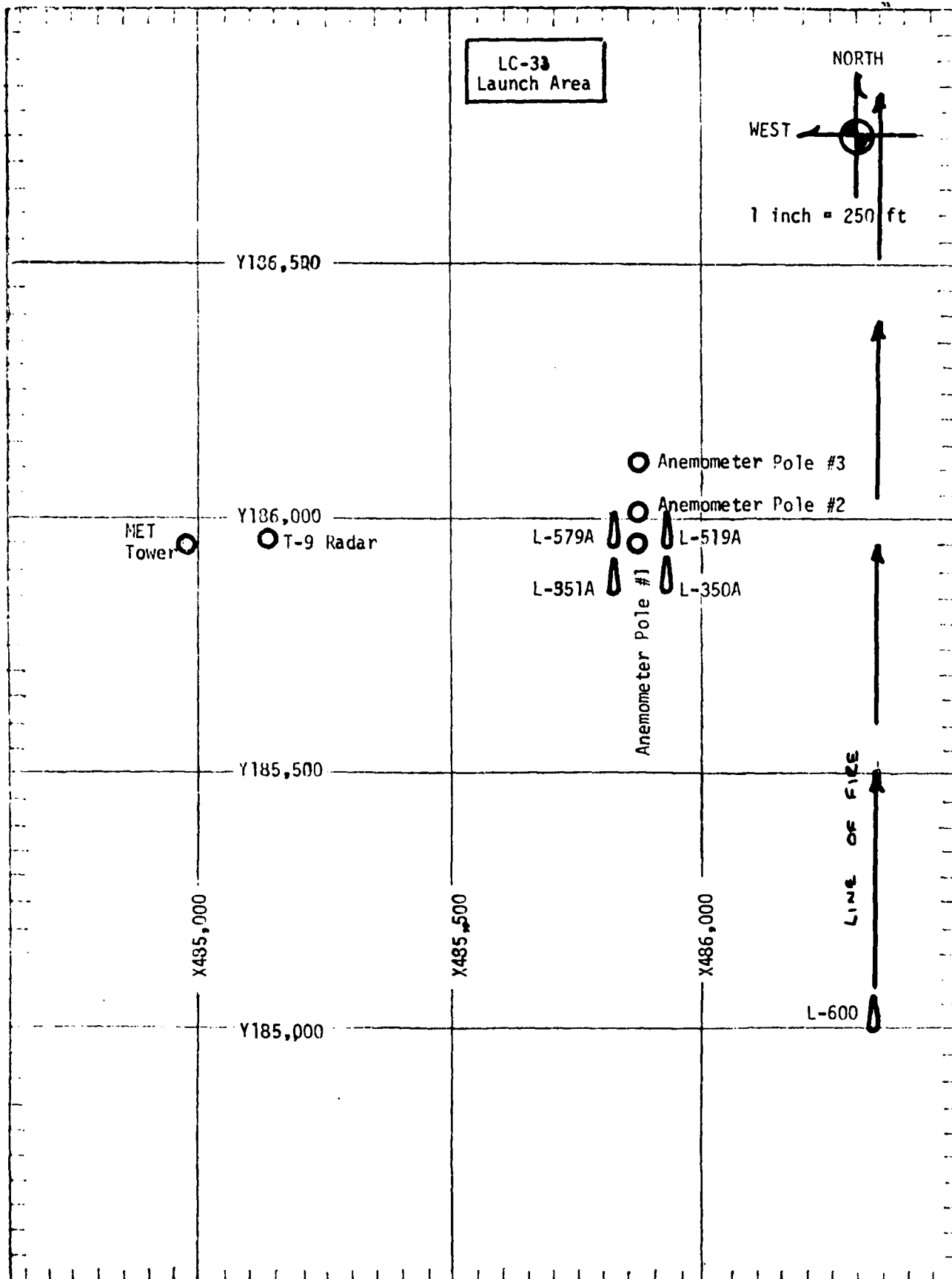
### SITE AND TIME

LC-37	0700 MST
Holloman	0700 MST
WSD	0827 MST

# WSMR METEOROLOGICAL SITES







# PROJECT SURFACE OBSERVATION

STATION LC-33 E & A												
TABLE 1		DATE 11 MAR 82		X= 484,982.64		Y=185,956.73		H= 3983.00				
TIME M S T	DAY	MONTH	YEAR	PRESSURE mbs	TEMPERATURE OF OC	DEW POINT OF OC	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	WIND DIRECTION DEGS IN	WIND SPEED KTS	CHARACTER KTS	VISIBILITY
0827				880.3	17.2	1.8	35	1052		CALM		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
None	5	AS	12,000	3	CS	23,000	

## PSYCHROMETRIC COMPUTATION

TIME:	0827
DRY BULB TEMP.	17.2
WET BULB TEMP.	9.1
WET BULB DEPR.	8.1
DEW POINT	1.8
RELATIVE HUMID.	3.5

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 33.7 ft. AGL			POLE #2 X485,871.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.00 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30		CALM	T -30		CALM	T -30		CALM
T-20		CALM	T -20		CALM	T -20		CALM
T-10		CALM	T -10		CALM	T -10		CALM
T0.0		CALM	T 0.0		CALM	T 0.0		CALM
T+10		CALM	T +10		CALM	T +10		CALM

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30		CALM	T -30		CALM
T-20		CALM	T -20		CALM
T-10		CALM	T -10		CALM
T0.0		CALM	T 0.0		CALM
T+10		CALM	T +10		CALM

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30		CALM	T -30		CALM
T-20		CALM	T -20		CALM
T-10		CALM	T -10		CALM
T0.0		CALM	T 0.0		CALM
T+10		CALM	T +10		CALM

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# PROJECT SURFACE OBSERVATION

TABLE <u>4</u>											
STATION <u>JALLEN</u>											
DATE <u>11</u> <u>MAR</u> <u>82</u>		Y= <u>450,491.60</u> X= <u>464,023.05</u> H= <u>4053.00</u>									
DAY <u>11</u> MONTH <u>MAR</u> YEAR <u>82</u>											
TIME M S I	PRESSURE mbs	TEMPERATURE CF	TEMPERATURE OC	DEW POINT OF	DEW POINT OC	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	DIRECTION degs	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY
0730	877.6		11.6		2.0	51	1068		CALM		45
0800	878.0		12.5		2.7	51	1065		CALM		45
0830	877.9		15.9		3.2	43	1054		CALM		45

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	2	AS	12,000	7	C1	22,000	
	2	AS	12,000	6	C1	22,000	
	6	AS	12,000	3	C1	22,000	

## PSYCHROMETRIC COMPUTATION

TIME:	0730	0800	0830
DPY BULB TEMP.	11.6	12.5	15.9
WET BULB TEMP.	6.7	7.4	9.1
WET BULB DEPR.	4.9	5.1	6.8
DEW POINT	2.0	2.7	3.2
RELATIVE HUMID.	51	51	43

## PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33

DATE 11 March 1982

TIME 0817 MST

COORDINATES (WSTM)

$$\chi = 486,872.00$$
$$\gamma = 184,146.75$$

$\bar{y} = 3981.15$

HEIGHTS ARE METERS AGL X OR FEET AGL \_\_\_\_\_

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC		CALM
60		CALM
120	127	01
180	127	01
240	180	01
300	230	01
360	264	01
420	360	02
480	013	04
540	004	06
600	352	08
660	344	10
720	337	10
780	329	10
840	328	10
900	337	10
960	346	09
1020	343	10
1080	338	11
1140	333	11
1200	328	11
1260	322	11
1320	321	12
1380	320	13
1440	320	13
1500	319	14
1560	317	15
1620	315	15
1680	313	15
1740	312	16

[illegible][illegible]

# PILOT BALLOON MEASURED WIND DATA

TABLE 6

RELEASED FROM JALLEN DATE 11 March 1982 TIME 0817 MST

COORDINATES (WSTM) X= 450,491.60 Y= 464,023.05 Z= 4053.00

HEIGHTS ARE METERS AGL X OR FEET AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC		CALM	1800	295	19			
60	301	01	1860	294	19			
120	301	02	1920	293	18			
180	301	02	1980	292	18			
240	293	03	2040	288	19			
300	288	04	2100	284	20			
360	288	05	2160	LOST IN SUN				
420	297	06						
480	304	06						
540	309	07						
600	311	07						
660	314	08						
720	315	09						
780	316	10						
840	316	11						
900	316	12						
960	315	13						
1020	313	13						
1080	310	13						
1140	308	13						
1200	307	13						
1260	306	12						
1320	305	12						
1380	305	12						
1440	304	12						
1500	303	13						
1560	303	14						
1620	300	15						
1680	298	17						
1740	296	18						

## PILOT BALLOON MEASURED WIND DATA

TABLE 7

RELEASED FROM JALLEN

DATE 11 March 1982

TIME 0827 MST

COORDINATES (WSTM) X= 450,491.60 Y= 464,023.05 E= 4053.00

HEIGHT AGE METERS AGE X OR FEET AGE .

WIND AGE	DIRECTION DEGREES	SPEED KNOTS
SFC		CALM
60		CALM
120	258	01
180	258	01
240	279	02
300	286	02
360	293	03
420	303	04
480	309	05
540	311	06
600	311	07
660	311	07
720	310	08
780	309	09
840	308	11
900	308	12
960	308	13
1020	307	14
1080	305	14
1140	304	14
1200	305	14
1260	305	14
1320	305	14
1380	304	13
1440	301	14
1500	297	14
1560	294	15
1620	292	17
1680	291	18
1740	288	19

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STATION ALTITUDE 4051.17 FEET SL  
11 MAR. 62 0707 HRS 451  
ASCENDING 1.0. 13

SIGNIFICANT LEVEL DATA  
0700100013  
1C-37

GEOLITIC COORDINATES  
32.40175 LAT DEG  
106.31232 LONG DEG

TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
877.7	4051.4	8.8	-1.3	49.0
871.6	4243.0	14.8	2.0	42.0
850.0	4941.7	16.1	.7	35.0
816.9	6047.0	14.5	.0	37.0
767.0	7783.0	10.2	-2.1	42.0
717.2	9602.1	5.2	-2.1	59.0
700.0	10252.9	4.3	-5.5	49.0
623.1	13332.4	-1.8	-11.3	48.0
605.3	14089.2	-3.0	-6.6	65.0
571.1	15594.9	-6.5	-12.4	63.0
551.6	16485.8	-8.0	-13.8	63.0
535.1	17260.2	-9.4	-13.9	59.0
500.0	18974.3	-12.9	-17.4	59.0
469.2	20565.4	-14.4	-19.7	64.0
461.5	20977.6	-15.2	-20.6	63.0
445.0	21880.8	-16.6	-23.3	50.0
421.0	23244.2	-19.6	-27.3	50.0
400.0	24480.9	-22.1	-30.1	48.0
390.0	25101.6	-22.2	-31.1	44.0
368.9	26440.2	-24.9	-36.7	32.0
300.0	31256.8	-38.2	-46.1	34.0
287.9	32185.1	-40.5		
250.0	35295.6	-48.9		
224.1	37628.7	-55.2		
200.0	39991.5	-60.7		
178.9	42259.0	-64.2		
169.7	43427.1	-63.0		
155.6	45088.1	-62.8		
150.0	45830.5	-64.0		
126.4	49240.6	-69.8		
114.6	50086.1	-71.7		
112.0	51603.8	-70.5		
100.0	53822.0	-70.7		
98.4	54139.1	-68.8		
95.4	54755.4	-65.6		
89.4	56063.0	-64.2		
82.0	57602.5	-66.8		
70.0	60947.6	-67.5		
61.7	63479.4	-64.0		
56.1	65403.7	-64.2		



STATION ALTITUDE 4051.27 FEET SL  
 11 MAR. 62 0700 HRS MS1  
 ASCENSION NO. 13

SIGNIFICANT LEVEL DATA  
 070010015  
 LC-37

TABLE 8 Cont'd

PRESSURE MILLIBARS MSL FEET	GEOMETRIC ALTITUDE	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
53.6	66333.0	-60.7		
50.0	67764.4	-60.1		
45.9	69520.6	-62.0		
40.8	71950.9	-58.0		
35.7	74729.3	-58.5		
30.0	78497.3	-51.2		
20.4	86751.2	-48.6		

STATION COORDINATES  
 32.40175 LAT DEG  
 106.34232 LONG DEG

STATION ALTITUDE 4051.57 FEET SL  
11 MAR. 62 0700 HRS MST  
ASCENSION NO. 13

UPPER AIR DATA  
07001800LS  
LC-37

GEOGRAPHIC COORDINATES  
32.40175 LAT DEG  
106.31252 LONG DEG

TABLE 9

GEOGRAPHIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEGREES	EL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	877.7	8.8	-1.3	49.0	1081.9	654.9	0	1.000208
4500.0	865.6	15.3	1.6	39.4	1039.9	662.0	323.4	1.000203
5000.0	840.2	10.0	0.6	35.1	1019.0	663.4	323.4	1.000206
5500.0	835.1	15.3	0.3	36.0	1003.3	662.0	323.4	1.000252
6000.0	810.3	14.6	0.0	36.9	988.0	661.7	323.1	1.000248
6500.0	803.6	13.4	-0.5	38.3	974.3	660.4	320.5	1.000244
7000.0	789.1	12.1	-1.1	39.7	961.0	659.9	310.7	1.000240
7500.0	774.9	10.9	-1.8	41.2	947.9	657.4	310.1	1.000236
8000.0	760.9	9.6	-2.0	44.0	935.0	655.9	306.9	1.000233
8500.0	747.0	8.2	-1.9	48.7	922.3	654.4	305.4	1.000231
9000.0	733.3	6.9	-1.9	53.4	909.9	652.8	307.6	1.000228
9500.0	719.9	5.5	-2.1	58.0	897.0	651.2	309.7	1.000220
10000.0	706.6	4.6	-4.1	52.9	884.0	650.1	308.9	1.000219
10500.0	693.5	3.8	-5.9	48.9	870.4	649.0	307.7	1.000213
11000.0	680.5	2.8	-6.9	48.8	857.3	647.8	303.0	1.000209
11500.0	667.8	1.8	-7.8	48.6	844.4	646.0	299.2	1.000205
12000.0	655.3	0.8	-8.8	48.4	831.6	645.4	293.4	1.000201
12500.0	643.0	-0.2	-9.7	48.3	819.1	644.2	287.2	1.000197
13000.0	631.0	-1.1	-10.7	48.1	806.8	643.0	281.2	1.000194
13500.0	619.1	-2.1	-10.6	51.8	794.3	642.0	274.5	1.000191
14000.0	607.4	-2.9	-8.9	63.0	781.3	641.1	267.9	1.000190
14500.0	595.8	-4.0	-7.6	64.5	769.5	639.8	262.0	1.000187
15000.0	584.4	-5.1	-10.9	63.8	758.2	638.4	258.5	1.000183
15500.0	573.2	-6.3	-12.1	63.1	747.0	636.9	250.0	1.000179
16000.0	562.1	-7.2	-13.0	63.0	735.2	635.0	255.0	1.000176
16500.0	551.3	-8.0	-13.8	62.9	723.3	634.8	255.2	1.000172
17000.0	540.6	-8.9	-15.2	60.3	711.8	633.7	255.1	1.000169
17500.0	530.0	-9.9	-16.1	60.4	700.5	632.5	255.0	1.000166
18000.0	519.7	-10.9	-16.5	63.3	689.5	631.5	250.3	1.000163
18500.0	509.5	-11.9	-16.9	66.2	678.0	630.0	250.0	1.000160
19000.0	499.5	-12.9	-17.4	68.9	667.9	628.8	250.3	1.000157
19500.0	489.6	-13.4	-18.1	67.3	655.9	628.2	255.1	1.000154
20000.0	479.9	-13.9	-18.9	65.8	644.1	627.0	259.4	1.000151
20500.0	470.4	-14.3	-19.6	64.2	632.5	627.1	272.0	1.000148
21000.0	461.1	-15.2	-20.7	62.8	622.2	626.0	275.4	1.000145
21500.0	451.9	-16.0	-22.1	59.0	611.7	625.0	277.9	1.000142
22000.0	442.8	-16.9	-23.6	55.5	601.5	623.9	279.8	1.000139
22500.0	433.9	-18.0	-25.1	53.3	592.0	622.5	281.4	1.000136
23000.0	425.2	-19.1	-26.6	51.1	582.0	621.2	282.2	1.000134
23500.0	410.6	-20.1	-27.9	49.6	573.2	619.9	282.0	1.000131

STATION ALTITUDE 4051.37 FEET SL  
11 MAR. 62 0700 HRS MST  
ASCENSION NO. 15

UPPER AIR DATA  
0700100015  
LC-37

TABLE 9 Cont'd

COORDINATES  
32.40175 LAT DEG  
106.51252 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	EL. HUMIDITY PERCENT	DENSITY GM/CM <sup>3</sup> METER	WIND SPEED KNOTS	WIND DIRECTION DEGREES (TRUE)	WIND SPEED KNOTS	INDEX OF REFRACTION
24000.0	400.1	-21.1	48.8	563.8	010.0	203.4	54.4	1.000129
24500.0	399.8	-22.1	47.9	554.5	017.4	204.4	54.1	1.000127
25000.0	391.6	-22.2	44.7	543.4	017.3	205.0	55.0	1.000124
25500.0	383.6	-23.0	40.4	534.0	010.3	203.5	56.2	1.000121
26000.0	375.7	-24.0	35.9	525.2	013.0	205.5	57.2	1.000119
26500.0	368.0	-25.1	32.0	516.0	013.7	205.5	57.9	1.000117
27000.0	360.1	-26.4	32.2	508.4	012.0	204.3	56.8	1.000115
27500.0	352.5	-27.8	32.4	500.4	010.3	203.2	56.0	1.000113
28000.0	345.0	-29.2	32.6	492.6	008.5	202.0	55.7	1.000111
28500.0	337.7	-30.6	32.9	484.9	008.8	201.2	55.5	1.000109
29000.0	330.5	-32.0	33.1	477.3	005.1	200.0	55.5	1.000107
29500.0	323.5	-33.3	33.3	469.9	003.3	200.5	55.9	1.000105
30000.0	316.6	-34.7	33.5	462.6	001.0	200.1	56.0	1.000104
30500.0	309.9	-36.1	33.7	455.4	599.0	279.0	57.7	1.000102
31000.0	303.3	-37.5	33.9	448.3	598.1	279.0	58.9	1.000100
31500.0	296.8	-38.8	25.1**	441.1	596.4	278.6	60.0	1.000099
32000.0	290.3	-40.0	6.8**	433.8	594.6	278.5	61.1	1.000097
32500.0	283.8	-41.4		426.5	593.1	279.2	62.2	1.000095
33000.0	277.4	-42.7		419.4	591.4	280.2	63.7	1.000093
33500.0	271.2	-44.1		412.4	589.7	281.5	65.7	1.000092
34000.0	265.1	-45.4		405.6	587.9	282.0	66.6	1.000090
34500.0	259.2	-46.8		398.8	586.2	282.5	66.9	1.000089
35000.0	253.4	-48.1		392.2	584.4	282.2	64.5	1.000087
35500.0	247.6	-49.5		385.0	582.7	281.9	61.1	1.000086
36000.0	241.9	-50.8		379.0	580.9	280.5	57.6	1.000084
36500.0	236.3	-52.2		372.4	579.1	278.0	54.1	1.000083
37000.0	230.8	-53.5		366.1	577.4	275.8	54.7	1.000082
37500.0	225.5	-54.9		359.8	575.0	272.9	55.5	1.000080
38000.0	220.1	-56.1		353.2	574.0	271.5	62.2	1.000079
38500.0	214.9	-57.2		346.7	572.5	270.5	69.0	1.000077
39000.0	209.8	-58.4		340.3	570.9	270.4	73.8	1.000076
39500.0	204.8	-59.6		334.0	569.4	270.4	78.5	1.000074
40000.0	199.9	-60.7		327.0	567.8	270.5	80.6	1.000073
40500.0	195.1	-61.5		321.0	566.0	270.0	81.6	1.000071
41000.0	190.3	-62.3		314.4	563.8	270.9	82.0	1.000070
41500.0	185.7	-63.0		307.9	564.7	271.0	81.4	1.000069
42000.0	181.2	-63.8		301.5	563.7	272.4	80.7	1.000067
42500.0	176.8	-63.9		294.4	563.5	273.7	79.2	1.000066
43000.0	172.5	-63.4		286.4	563.3	274.9	78.0	1.000064
43500.0	168.3	-63.0		278.9	564.8	275.0	78.3	1.000062

\*\* AT LAST ONE .55 MLD REL. HUM. VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL  
11 MAR 52 0700 HRS MST  
ASCENSION NO. 13

UPPER AIR DATA  
0700180013  
LC-37

GEODETIC COORDINATES  
32.40175 LAT DEG  
100.31232 LONG DEG

TABLE 9 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBAR	AIR TEMPERATURE DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND METER	WIND DIRECTION DEGREES (IN)	WIND SPEED KNOTS	INDEX OF REFRACTION
44000.0	164.2	-62.9		272.0	564.9	270.7	78.5	1.000001
44500.0	160.2	-62.9		265.3	564.9	277.4	77.5	1.000059
45000.0	156.3	-62.8		258.8	563.0	278.1	76.5	1.000058
45500.0	152.5	-63.5		253.3	564.1	279.0	74.2	1.000056
46000.0	148.7	-64.3		248.1	563.0	281.7	72.0	1.000055
46500.0	145.0	-65.1		242.9	561.9	283.6	71.9	1.000054
47000.0	141.4	-66.0		237.9	560.7	285.4	72.3	1.000053
47500.0	137.9	-66.8		232.9	559.0	288.5	72.3	1.000052
48000.0	134.5	-67.7		228.1	558.4	287.1	71.9	1.000051
48500.0	131.2	-68.5		223.4	557.3	287.2	70.6	1.000050
49000.0	127.9	-69.4		218.7	556.1	288.5	68.3	1.000049
49500.0	124.7	-70.2		214.1	555.0	285.0	66.2	1.000048
50000.0	121.6	-71.0		209.5	554.0	284.1	64.7	1.000047
50500.0	118.5	-71.7		204.9	553.0	282.5	63.0	1.000046
51000.0	115.5	-71.1		199.2	553.7	281.4	61.0	1.000044
51500.0	112.6	-70.6		193.7	554.4	280.3	59.0	1.000043
52000.0	109.8	-70.5		188.7	554.5	279.9	58.0	1.000042
52500.0	107.0	-70.6		184.0	554.5	279.4	56.9	1.000041
53000.0	104.3	-70.6		179.4	554.4	279.3	57.8	1.000040
53500.0	101.7	-70.7		174.9	554.4	279.1	58.8	1.000039
54000.0	99.1	-69.6		169.6	553.8	280.0	56.0	1.000038
54500.0	96.6	-68.9		163.2	559.5	281.5	51.6	1.000036
55000.0	94.2	-68.3		158.0	561.0	283.4	46.7	1.000035
55500.0	91.9	-64.8		153.7	562.3	288.5	40.8	1.000034
56000.0	89.7	-64.3		149.6	563.1	290.6	35.1	1.000033
56500.0	87.5	-64.9		146.4	562.1	290.9	32.7	1.000033
57000.0	85.3	-65.8		143.3	561.0	290.5	30.7	1.000032
57500.0	83.2	-66.6		140.4	559.9	289.9	27.9	1.000031
58000.0	81.2	-66.9		137.1	559.5	288.6	23.1	1.000031
58500.0	79.2	-67.0		133.7	559.4	286.6	18.3	1.000030
59000.0	77.2	-67.1		130.5	559.2	287.2	14.2	1.000029
59500.0	75.3	-67.2		127.3	559.1	290.6	10.6	1.000028
60000.0	73.4	-67.3		124.2	558.9	297.7	7.0	1.000028
60500.0	71.6	-67.4		121.2	558.8	302.0	10.1	1.000027
61000.0	69.8	-67.4		118.2	558.8	304.1	13.4	1.000026
61500.0	68.1	-66.7		114.9	559.7	308.5	16.5	1.000026
62000.0	66.4	-66.0		111.7	560.6	308.7	19.4	1.000025
62500.0	64.8	-65.4		108.6	561.6	311.9	20.9	1.000024
63000.0	63.2	-64.7		105.6	562.5	320.4	18.7	1.000024
63500.0	61.6	-64.0		102.7	563.4	330.8	17.0	1.000023

STATION ALTITUDE 4051.7 FT SL  
11 MAP. 22  
ASCENSION: 110. 13

UPPER AIR DATA  
0700180015  
LC-37

MODET. COORDINATES,  
32.40175 LAT DEG  
106.51252 LONG DEG

TABLE 9 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND METER	WIND DATA DIRECTION (IN) SPEED KNOTS	INDEX OF REFRACTION
64000.0	60.1	-74.1		100.2	565.3	342.2	1.000022
64500.0	58.7	-74.1		97.6	565.3	358.2	1.000022
65000.0	57.2	-74.2		95.4	563.2	9.2	1.000021
65500.0	55.8	-73.8		92.9	563.6	14.2	1.000021
66000.0	54.5	-72.0		89.9	560.2	20.9	1.000020
66500.0	53.2	-70.6		87.2	567.9	16.3	1.000019
67000.0	51.9	-70.4		85.0	560.2	7.4	1.000019
67500.0	50.6	-60.2		82.9	560.5	56.2	1.000018
68000.0	49.4	-60.4		80.9	568.3	358.9	1.000018
68500.0	48.2	-60.9		79.2	567.6	322.3	1.000018
69000.0	47.1	-71.4		77.5	560.9	309.7	1.000017
69500.0	45.9	-72.0		75.8	560.1	300.7	1.000017
70000.0	44.8	-61.2		73.7	567.2	292.6	1.000016
70500.0	43.8	-60.4		71.7	560.3	288.1	1.000016
71000.0	42.7	-59.6		69.7	569.4	285.8	1.000016
71500.0	41.7	-59.7		67.8	570.4	283.7	1.000015
72000.0	40.7	-58.0		65.9	571.4	282.6	1.000015
72500.0	39.7	-56.1		64.4	571.3	281.9	1.000014
73000.0	38.8	-58.2		62.9	571.2	281.3	1.000014
73500.0	37.9	-58.3		61.4	571.1	281.1	1.000014
74000.0	37.0	-58.4		60.0	570.9	280.9	1.000013
74500.0	36.1	-58.5		58.6	570.8	280.8	1.000013
75000.0	35.2	-58.0		57.1	571.5	280.7	1.000013
75500.0	34.4	-57.0		55.5	572.8	280.7	1.000012
76000.0	33.6	-56.0		53.9	574.1	280.6	1.000012
76500.0	32.8	-55.0		52.4	575.4	280.6	1.000012
77000.0	32.1	-54.0		51.0	576.7	280.6	1.000011
77500.0	31.3	-53.0		49.6	576.0	279.7	1.000011
78000.0	30.6	-52.0		48.2	579.3	277.9	1.000011
78500.0	29.9	-51.2		46.9	580.4	276.2	1.000010
79000.0	29.2	-51.0		45.8	580.6	274.3	1.000010
79500.0	28.5	-50.9		44.7	580.8	272.2	1.000010
80000.0	27.9	-50.7		43.6	581.0	270.2	1.000010
80500.0	27.2	-50.5		42.6	581.2	269.0	1.000009
81000.0	26.6	-50.4		41.6	581.4	269.2	1.000009
81500.0	26.0	-50.2		40.8	581.7	269.3	1.000009
82000.0	25.4	-50.1		39.7	581.9	267.4	1.000009
82500.0	24.8	-49.9		38.7	582.1	267.7	1.000009
83000.0	24.3	-49.8		37.8	582.3	265.2	1.000008
83500.0	23.7	-49.6		36.9	582.5	264.4	1.000008

STATION ALTITUDE 4051.17 FT 1.5L  
 11 MAR. 62 0700 HRS PST  
 ASCENSION, MO. 13

UPPER AIR DATA  
 0700100010  
 LC-37  
 TABLE 9 Cont'd

GEOMETRIC ALTITUDE 4051.17 FT 1.5L  
 11 MAR. 62 0700 HRS PST  
 ASCENSION, MO. 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND METERS PER SECOND	WIND DIRECTION DEGREES (T)	WIND SPEED KNOTS	INDEX OF REFRACTION
04000.0	23.2	-49.5		30.1	342.7	232.6	29.8	1.000008
04500.0	22.6	-49.3		30.2	342.9	224.0	34.2	1.000008
05000.0	22.1	-49.1		34.4	343.1			1.000008
05500.0	21.6	-49.0		33.6	343.3			1.000007
06000.0	21.1	-48.8		32.6	343.5			1.000007
06500.0	20.6	-48.7		32.0	343.7			1.000007

STATION ALTITUDE 4051.77 FEET SL  
11 MAR. 62 0700 HRS MST  
ASCENSION NO. 13

MANDATORY LEVELS  
070018001J  
LC-37  
TABLE 10

GEODETIC COORDINATES  
32.41175 LAT DEG  
106.31232 LONG DEG

PRESSURE MILLIBARS	GEOD. OFFICIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4930.	16.1	-7	35.	323.4	9.8
800.0	6620.	13.1	-7	39.	319.9	9.9
750.0	8386.	8.5	-1.9	40.	306.5	15.6
700.0	10243.	4.3	-5.5	49.	308.4	25.6
650.0	12209.	.4	-9.2	40.	290.9	25.1
600.0	14301.	-3.5	-9.2	63.	264.0	34.2
550.0	16539.	-8.1	-14.0	63.	255.2	40.8
500.0	18948.	-12.9	-17.4	69.	259.9	43.7
450.0	21571.	-16.2	-22.5	58.	278.4	60.0
400.0	24448.	-22.1	-30.1	48.	264.3	54.1
350.0	27640.	-28.3	-39.6	33.	282.8	53.9
300.0	31195.	-38.2	-48.1	34.	273.8	59.4
250.0	35218.	-48.6			262.0	62.6
200.0	39895.	-60.7			270.5	60.6
175.0	42596.	-63.7			274.1	78.6
150.0	45707.	-64.0			260.9	72.8
125.0	49318.	-70.1			285.8	60.5
100.0	53657.	-70.7			279.4	57.8
80.0	58097.	-66.9			287.8	20.6
70.0	60740.	-67.5			303.9	12.9
60.0	63817.	-64.1			342.0	14.2
50.0	67511.	-60.1			348.4	5.8
40.0	72077.	-58.1			282.1	9.9
30.0	78075.	-51.2			276.0	20.4
25.0	81974.	-50.0			263.4	27.1

STATION / ALTITUDE 4126.9 FEET MSL  
 11 MAR. 62 0700 UTC  
 ASLUSION: 110. 68

SIGNIFICANT LEVEL DATA  
 0700010000  
 100LL0001.

GEODETIC COORDINATES  
 32.00005 LAT DEG  
 106.00005 LONG DEG

TABLE 11

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
875.0	4126.6	8.0	53.0
872.1	4217.9	15.8	51.0
862.5	4527.4	17.1	48.0
850.0	4936.1	16.5	42.0
717.1	9597.9	5.4	50.0
700.0	10245.6	4.6	52.0
672.7	11308.8	3.3	48.0
629.1	13082.6	-6	46.0
568.6	15710.6	-6.7	75.0
544.9	16001.4	-8.4	72.0
521.7	17905.0	-11.5	78.0
505.1	18720.0	-12.7	80.0
500.0	18974.8	-13.0	77.0
467.0	20680.6	-15.2	69.0
456.3	21255.9	-16.3	74.0
429.0	22744.1	-18.1	55.0
400.0	24491.8	-20.4	50.0
387.1	25288.7	-21.7	45.0
333.7	28022.0	-30.9	44.0
309.0	31274.2	-37.7	40.0
272.4	33433.9	-43.5	
250.0	35318.2	-48.7	
223.1	37745.0	-55.7	
209.0	40007.5	-61.6	
174.7	42177.5	-64.6	
170.9	43191.0	-63.5	
153.2	44755.9	-63.0	
150.0	45032.1	-64.5	
139.0	48560.4	-69.3	
117.5	50602.7	-71.1	
109.5	53734.2	-68.4	
100.0	53033.5	-65.8	
95.8	54700.0	-62.6	
76.1	59314.5	-60.0	
70.0	60980.5	-64.9	
62.1	63016.2	-60.8	
54.9	65928.0	-64.1	
50.0	67029.0	-61.8	
47.6	68750.8	-61.4	
47.1	69054.5	-59.4	



STATION ALTITUDE 4126.79 FEET SL  
 11 MAP. 12 070 100000  
 ASCENSION NO. 08

SIGNIFICANT LEVEL DATA  
 07,0010000  
 HOLLOWAY

TABLE 11 Cont'd

PRESSURE	GEOGRAPHIC ALTITUDE	TEMPERATURE AIR DEGREE	TEMPERATURE REL. HUM.
HILLIARDS MSL FEET	ALTITUDE	DEGREES CENTIGRADE	PERCENT
43.5	70694.5	-60.7	
31.6	77233.3	-54.5	
30.0	78074.7	-51.9	
25.0	82396.2	-50.4	
22.7	84091.8	-47.8	

GEOLYTIC COORDINATES  
32-00005 LAT DEG  
106-09965 LONG DEG

UPPER AIR DATA  
070010060  
HOLLOWAY  
TABLE 12

STATION ALTITUDE 4126.09 FEET SL  
11 MAR. 12 0700 HRS '31  
ASCLUSTION NO. 04

GEOMETRIC ALTITUDE IN SL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CELSIUS	WIND DIRECTION DEGREES	WIND SPEED KNOTS	INDEX OF REFRACTION
4126.00	875.0	8.0	-1.0	40.0	1.000200
4500.00	863.5	17.0	5.4	7.0	1.000271
5000.00	840.0	16.3	3.5	342.0	1.000202
5500.00	832.7	15.2	3.0	331.5	1.000258
6000.00	817.7	14.0	2.4	325.0	1.000254
6500.00	802.9	12.8	1.9	318.9	1.000250
7000.00	780.4	11.6	1.3	315.2	1.000246
7500.00	760.1	10.4	.7	313.0	1.000241
8000.00	740.4	8.0	.0	312.2	1.000237
8500.00	732.9	6.8	-7.7	311.9	1.000233
9000.00	719.7	5.6	-1.3	313.0	1.000229
9500.00	700.4	4.9	-2.0	313.5	1.000225
10000.00	693.4	4.3	-3.5	310.6	1.000220
10500.00	687.5	3.7	-5.0	307.5	1.000214
11000.00	680.9	2.9	-6.4	302.0	1.000209
11500.00	675.9	2.9	-7.6	296.9	1.000205
12000.00	655.4	1.8	-8.6	290.4	1.000201
12500.00	645.1	.7	-9.0	285.4	1.000197
13000.00	631.1	-.4	-10.6	277.1	1.000193
13500.00	619.1	-1.6	-10.5	271.5	1.000191
14000.00	607.3	-2.7	-10.2	266.9	1.000189
14500.00	595.7	-3.9	-10.1	263.0	1.000186
15000.00	584.4	-5.1	-10.2	261.4	1.000184
15500.00	573.2	-6.2	-10.3	260.0	1.000181
16000.00	562.2	-7.2	-10.9	258.7	1.000178
16500.00	551.3	-7.9	-11.9	257.5	1.000174
17000.00	540.7	-9.0	-12.9	258.4	1.000171
17500.00	530.1	-10.4	-13.8	260.7	1.000168
18000.00	519.8	-11.6	-14.6	260.6	1.000165
18500.00	509.5	-12.4	-15.2	263.7	1.000162
19000.00	499.5	-13.0	-16.2	265.0	1.000158
19500.00	489.6	-13.7	-17.2	269.9	1.000155
20000.00	479.9	-14.3	-18.2	261.1	1.000152
20500.00	470.4	-15.0	-19.2	267.5	1.000149
21000.00	461.0	-15.8	-19.7	278.0	1.000146
21500.00	451.8	-16.6	-20.6	279.4	1.000143
22000.00	442.7	-17.2	-22.3	279.4	1.000140
22500.00	433.2	-17.8	-24.0	260.0	1.000137
23000.00	425.1	-18.4	-25.4	260.5	1.000134
23500.00	410.5	-19.1	-26.3	279.7	1.000131

STATION ALTITUDE 4126.49 FEET SL  
11 MAR. 52 0700 HRS (5)  
ASCENSION 140. 6H

UPPER AIR DATA  
070010000  
HOLLOWAY

GEODETIC COORDINATES  
32.00005 LAT DEG  
100.05965 LON DEG

TABLE 12 Cont'd

GEODETIC ALTITUDE FSL FEET	PRESSURE MILLIBARS	TEMPERATURE /IR DEGREES CELSIUS	EL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND MMS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OR REFRACTION
24000.0	400.1	-19.8	51.4	560.7	620.5	200.7	59.2	1.000129
24500.0	399.9	-20.4	49.9	550.9	619.5	201.5	61.5	1.000126
25000.0	391.7	-21.2	46.8	541.4	618.5	201.8	64.2	1.000124
25500.0	383.7	-22.3	44.9	532.5	617.2	202.0	65.4	1.000121
26000.0	375.7	-23.6	44.8	524.2	615.6	202.1	65.5	1.000119
26500.0	367.9	-24.9	44.7	516.0	614.0	202.2	62.5	1.000117
27000.0	360.2	-26.2	44.5	507.9	612.4	203.1	60.2	1.000115
27500.0	352.8	-27.5	44.4	500.0	610.7	203.7	58.5	1.000113
28000.0	345.4	-28.8	44.2	492.5	609.1	203.1	58.9	1.000111
28500.0	338.2	-30.1	44.1	484.6	607.5	202.5	59.7	1.000109
29000.0	331.1	-31.4	44.3	477.0	605.8	201.6	60.6	1.000108
29500.0	324.0	-32.8	45.1	469.5	604.1	201.5	60.7	1.000106
30000.0	317.1	-34.2	45.9	462.1	602.3	201.5	59.6	1.000104
30500.0	310.3	-35.6	46.7	454.8	600.6	201.7	57.7	1.000102
31000.0	303.6	-36.9	47.6	447.7	598.8	202.2	55.0	1.000101
31500.0	297.0	-38.3	48.1	440.5	597.1	202.9	53.8	1.000099
32000.0	290.4	-39.6	51.9**	433.5	595.5	203.9	54.1	1.000097
32500.0	284.0	-41.0	20.8**	426.2	593.9	204.5	56.7	1.000095
33000.0	277.8	-42.3	9.7**	419.2	591.9	204.6	61.9	1.000093
33500.0	271.6	-43.7		412.4	590.2	204.5	60.6	1.000092
34000.0	265.5	-45.1		405.5	588.4	204.2	70.6	1.000090
34500.0	259.5	-46.4		398.6	586.6	204.0	73.1	1.000089
35000.0	253.7	-47.8		392.2	584.8	204.0	72.0	1.000087
35500.0	247.9	-49.2		385.6	583.0	203.9	70.8	1.000086
36000.0	242.1	-50.7		379.1	581.1	203.5	69.5	1.000084
36500.0	236.5	-52.1		372.6	579.2	203.0	68.1	1.000083
37000.0	231.0	-53.6		366.5	577.5	202.1	69.0	1.000082
37500.0	225.7	-55.0		360.4	575.4	201.5	69.9	1.000080
38000.0	220.4	-56.4		354.1	573.6	200.1	71.5	1.000079
38500.0	215.1	-57.7		347.8	571.9	203.6	73.5	1.000077
39000.0	210.0	-59.0		341.5	570.1	201.4	74.7	1.000076
39500.0	205.0	-60.3		335.4	568.4	205.9	75.9	1.000075
40000.0	200.1	-61.6		329.4	566.7	204.9	77.5	1.000073
40500.0	195.2	-62.5		322.5	565.0	204.1	79.1	1.000072
41000.0	190.4	-63.0		315.7	564.6	204.2	80.9	1.000070
41500.0	185.6	-63.7		309.0	563.9	204.6	82.8	1.000069
42000.0	181.3	-64.4		302.5	562.9	205.5	84.6	1.000067
42500.0	176.9	-64.2		294.9	562.1	205.5	86.3	1.000066
43000.0	172.5	-63.7		287.6	561.5	207.5	88.3	1.000064
43500.0	168.3	-63.4		279.5	560.2	208.5	90.5	1.000062

\*\* AT LAST ONE AND TWO MED RELATIVE HUMIDITY VALUE WAS USED TO THE INTERPOLATED.

STATION ALTITUDE 4126.59 FEET MSL  
 11 MAR. 62 0700 HRS PST  
 ASCENSION I.O. ON

UPPER AIR DATA  
 0700010000  
 HOLLOWAY.

GEOLYTIC COORDINATES  
 32.00005 LAT DEG  
 100.00005 LONG DEG

TABLE 12 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES C.	WIND DIRECTION DEGREES C.	WIND SPEED METER	DENSITY GRAMS PER CUBIC METER	SPEED OF SOUND METER PER SECOND	WIND DIRECTION DEGREES C.	WIND SPEED KNOTS	INDEX OF REFRACTION
44000.0	164.2	-73.2		272.5	364.4		279.4	92.0	1.000001
44500.0	160.2	-73.1		265.7	364.6		280.3	92.5	1.000039
45000.0	156.3	-73.3		259.5	364.3		281.2	92.2	1.000058
45500.0	152.5	-74.0		254.0	363.4		282.1	90.8	1.000057
46000.0	148.7	-74.4		248.7	362.3		283.1	85.4	1.000055
46500.0	145.1	-75.7		243.6	361.1		284.2	81.1	1.000054
47000.0	141.5	-76.6		238.5	360.0		285.3	76.7	1.000053
47500.0	138.0	-77.4		233.6	358.8		286.4	75.0	1.000052
48000.0	134.5	-78.3		228.8	357.6		287.5	73.6	1.000051
48500.0	131.2	-79.2		224.1	356.4		288.6	73.4	1.000050
49000.0	127.9	-79.7		219.0	355.7		289.6	73.4	1.000049
49500.0	124.7	-80.1		213.9	355.1		290.6	73.1	1.000048
50000.0	121.5	-80.5		209.0	354.5		291.6	72.7	1.000047
50500.0	118.5	-81.0		204.1	354.0		292.7	71.8	1.000045
51000.0	115.5	-81.5		199.8	354.2		293.7	70.2	1.000044
51500.0	112.6	-82.4		193.4	354.6		294.5	67.4	1.000043
52000.0	109.8	-83.0		188.2	355.4		295.4	62.3	1.000042
52500.0	107.6	-83.5		183.0	356.0		296.3	57.0	1.000041
53000.0	104.5	-84.6		178.1	356.6		297.2	50.8	1.000039
53500.0	101.7	-85.2		173.2	357.2		298.1	45.0	1.000037
54000.0	99.2	-85.8		168.1	358.1		299.0	42.6	1.000036
54500.0	96.8	-86.3		160.6	359.3		300.0	40.3	1.000035
55000.0	94.4	-86.8		153.1	360.0		301.0	37.6	1.000034
55500.0	92.1	-87.4		149.8	360.9		302.0	34.9	1.000033
56000.0	89.8	-88.1		146.6	361.9		303.0	31.2	1.000032
56500.0	87.6	-88.5		143.5	362.9		304.0	28.0	1.000031
57000.0	85.4	-89.0		140.4	364.1		305.0	25.7	1.000030
57500.0	83.3	-89.5		137.4	365.1		306.0	23.4	1.000029
58000.0	81.3	-90.0		134.5	366.2		307.0	21.8	1.000028
58500.0	79.3	-90.6		131.6	367.2		308.0	20.9	1.000027
59000.0	77.3	-91.2		128.4	368.3		309.0	20.0	1.000026
59500.0	75.4	-91.8		125.4	369.4		310.0	19.5	1.000025
60000.0	73.5	-92.4		122.6	370.5		311.0	18.8	1.000024
60500.0	71.7	-93.0		119.5	371.6		312.0	18.2	1.000023
61000.0	69.9	-93.6		117.0	372.7		313.0	17.8	1.000022
61500.0	68.2	-94.2		114.5	373.8		314.0	17.4	1.000021
62000.0	66.6	-94.8		112.0	374.9		315.0	16.5	1.000020
62500.0	65.0	-95.4		110.5	376.0		316.0	15.4	1.000019
63000.0	63.4	-96.0		107.5	377.1		317.0	14.9	1.000018
63500.0	61.8	-96.6		104.5	378.2		318.0	14.5	1.000017
64000.0	60.2	-97.2		101.5	379.3		319.0	14.0	1.000016
64500.0	58.6	-97.8		98.5	380.4		320.0	13.2	1.000015
65000.0	57.0	-98.4		95.7	381.5		321.0	12.7	1.000014
65500.0	55.4	-99.0		93.0	382.6		322.0	12.2	1.000013
66000.0	53.8	-99.6		90.3	383.7		323.0	11.8	1.000012
66500.0	52.2	-100.2		87.6	384.8		324.0	11.4	1.000011
67000.0	50.6	-100.8		85.0	385.9		325.0	11.0	1.000010
67500.0	49.0	-101.4		82.4	387.0		326.0	10.6	1.000009
68000.0	47.4	-102.0		79.8	388.1		327.0	10.2	1.000008
68500.0	45.8	-102.6		77.2	389.2		328.0	9.8	1.000007
69000.0	44.2	-103.2		74.6	390.3		329.0	9.4	1.000006
69500.0	42.6	-103.8		72.0	391.4		330.0	9.0	1.000005
70000.0	41.0	-104.4		69.4	392.5		331.0	8.6	1.000004
70500.0	39.4	-105.0		66.8	393.6		332.0	8.2	1.000003
71000.0	37.8	-105.6		64.2	394.7		333.0	7.8	1.000002
71500.0	36.2	-106.2		61.6	395.8		334.0	7.4	1.000001
72000.0	34.6	-106.8		59.0	396.9		335.0	7.0	1.000000
72500.0	33.0	-107.4		56.4	398.0		336.0	6.6	1.000000
73000.0	31.4	-108.0		53.8	399.1		337.0	6.2	1.000000
73500.0	29.8	-108.6		51.2	400.2		338.0	5.8	1.000000
74000.0	28.2	-109.2		48.6	401.3		339.0	5.4	1.000000
74500.0	26.6	-109.8		46.0	402.4		340.0	5.0	1.000000
75000.0	25.0	-110.4		43.4	403.5		341.0	4.6	1.000000
75500.0	23.4	-111.0		40.8	404.6		342.0	4.2	1.000000
76000.0	21.8	-111.6		38.2	405.7		343.0	3.8	1.000000
76500.0	20.2	-112.2		35.6	406.8		344.0	3.4	1.000000
77000.0	18.6	-112.8		33.0	407.9		345.0	3.0	1.000000
77500.0	17.0	-113.4		30.4	409.0		346.0	2.6	1.000000
78000.0	15.4	-114.0		27.8	410.1		347.0	2.2	1.000000
78500.0	13.8	-114.6		25.2	411.2		348.0	1.8	1.000000
79000.0	12.2	-115.2		22.6	412.3		349.0	1.4	1.000000
79500.0	10.6	-115.8		20.0	413.4		350.0	1.0	1.000000
80000.0	9.0	-116.4		17.4	414.5		351.0	0.6	1.000000
80500.0	7.4	-117.0		14.8	415.6		352.0	0.2	1.000000
81000.0	5.8	-117.6		12.2	416.7		353.0	0.0	1.000000
81500.0	4.2	-118.2		9.6	417.8		354.0	0.0	1.000000
82000.0	2.6	-118.8		7.0	418.9		355.0	0.0	1.000000
82500.0	1.0	-119.4		4.4	420.0		356.0	0.0	1.000000
83000.0	0.0	-120.0		0.0	421.1		357.0	0.0	1.000000

STATION ALTITUDE 4126.9 FC, T. SL  
11 MAR. 62 0700 HRS EST  
ASCENDING 10.0. 68

WIND ALA DATA  
0700010000  
HOLLOMAN

CLOUDS IN COORDINATES  
32.0000 LAT DEG  
106.0000 LONG DEG

TABLE 12 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	EL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND M/S	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
04000.0	50.3	-71.6	99.4	560.7	45.3	12.4	1.000022
04500.0	50.0	-72.2	97.3	565.8	41.1	11.9	1.000022
05000.0	57.5	-72.9	95.2	564.9	31.1	11.0	1.000021
05500.0	50.1	-73.5	93.2	564.0	21.0	10.3	1.000021
06000.0	54.7	-74.0	91.1	563.4	13.9	9.4	1.000020
06500.0	53.4	-75.4	86.7	564.2	5.5	8.8	1.000020
07000.0	52.1	-72.8	80.3	563.0	0.0	7.4	1.000019
07500.0	50.8	-72.2	83.9	565.8	35.2	5.8	1.000019
08000.0	49.6	-71.7	81.7	560.5	34.8	4.6	1.000018
08500.0	40.4	-71.5	79.0	560.8	34.0	4.2	1.000018
09000.0	47.2	-74.8	77.1	569.1	30.8	4.3	1.000017
09500.0	40.1	-79.8	75.2	569.1	297.2	4.4	1.000017
70000.0	45.0	-70.1	73.6	560.6	291.4	4.5	1.000016
70500.0	43.9	-70.5	72.0	568.0	292.4	2.5	1.000016
71000.0	42.9	-70.4	70.2	568.2	93.1	1.9	1.000016
71500.0	41.9	-79.9	68.4	562.9	100.7	6.3	1.000015
72000.0	40.9	-79.5	66.6	569.5	101.5	9.2	1.000015
72500.0	39.9	-79.0	64.9	570.1	101.9	12.0	1.000014
73000.0	39.0	-78.5	63.2	570.8	102.1	11.7	1.000014
73500.0	38.0	-78.0	61.6	571.4	102.0	6.7	1.000014
74000.0	37.1	-77.6	60.0	572.0	101.6	1.8	1.000013
74500.0	36.2	-77.1	58.4	572.6	202.3	4.1	1.000013
75000.0	35.4	-76.6	56.9	573.3	202.4	10.1	1.000013
75500.0	34.6	-76.1	55.5	573.9	201.6	15.6	1.000012
76000.0	33.7	-75.7	54.0	574.5	200.0	19.7	1.000012
76500.0	32.9	-75.2	52.6	575.1	278.9	23.9	1.000012
77000.0	32.2	-74.7	51.3	575.8	277.5	27.4	1.000011
77500.0	31.4	-73.9	49.9	576.8	275.9	30.2	1.000011
78000.0	30.7	-72.9	48.5	575.2	274.5	33.0	1.000011
78500.0	30.0	-71.9	47.2	579.5	273.8	35.1	1.000011
79000.0	29.3	-71.7	46.1	579.7	273.5	36.4	1.000010
79500.0	28.6	-71.5	45.0	580.0	273.2	37.8	1.000010
80000.0	27.9	-71.3	43.9	580.2	273.5	39.9	1.000010
80500.0	27.3	-71.1	42.8	580.5	274.2	42.4	1.000010
81000.0	26.7	-70.9	41.8	580.7	274.6	44.9	1.000009
81500.0	26.1	-70.7	40.8	581.0	275.1	46.8	1.000009
82000.0	25.5	-70.6	39.9	581.2	275.3	48.4	1.000009
82500.0	24.9	-70.3	38.9	581.6	275.5	49.9	1.000009
83000.0	24.3	-70.7	37.9	582.4			1.000008
83500.0	23.8	-70.0	36.9	583.2			1.000008

STATION ALTITUDE 4126.59 FEET SL  
 13 MAR. 62 0700 HRS PST  
 ASCENSION, I.O. 06

UPPER AIR DATA  
 070010000  
 HOLLOWAY

TABLE 12 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND METER	WIND DATA DIRECTION SPEED KNOTS	INDEX UP REFRACTION
04000.0	23.2	-48.4		30.0	584.0		1.000008

STATION ALTITUDE #12649 FUEL SL  
11 MAR. 62 0700 HRS (EST)  
ASCENSION NO. 00

MANDATORY LEVELS  
070010000  
HOLLOWAY

VELOCITY COORDINATES  
32.00005 LAT DEG  
106.09965 LONG DEG

TABLE 13

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR (CECIS) CENTIGRADE	TEMPOTIAL CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
150.0	4933.	16.5	3.6	42.	344.8	6.8
100.0	6614.	12.5	1.8	40.	317.0	12.6
750.0	8379.	8.3	-5.5	54.	311.9	19.3
700.0	10236.	4.6	-4.4	52.	309.7	20.9
650.0	12208.	1.3	-9.0	40.	267.4	25.7
600.0	14304.	-3.5	-10.2	60.	264.9	33.6
550.0	16543.	-8.0	-12.1	73.	257.3	43.2
500.0	18949.	-13.0	-16.2	77.	260.2	45.9
450.0	21568.	-16.7	-20.9	70.	279.3	47.3
400.0	24452.	-20.4	-28.1	50.	281.5	61.4
350.0	27652.	-27.9	-36.3	44.	263.5	50.5
300.0	31213.	-37.7	-44.0	40.	262.4	53.6
250.0	35242.	-48.7			264.0	71.3
200.0	39913.	-61.6			274.9	77.4
175.0	42605.	-64.0			270.8	87.0
150.0	45711.	-64.5			262.7	80.7
125.0	49312.	-70.1			284.7	73.2
100.0	53670.	-65.8			261.2	43.5
80.0	58135.	-67.6			265.3	14.2
70.0	60775.	-64.9			306.1	24.9
60.0	63895.	-61.7			46.2	12.6
50.0	67579.	-61.8			350.3	4.9
40.0	72143.	-59.0			101.8	11.4
30.0	78145.	-51.0			273.8	34.9
25.0	82034.	-50.4			275.5	49.5

SCOUTIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA  
0700020003  
WHITE SANDS

TABLE 14

STATION ALTITUDE 3989.00 FEET MSL  
11 MAR. 82 0827 HRS MST  
ASCENSION NO. 09

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	RELATIVE PERCENT
679.9 3989.0	15.4 2.2	41.0
868.4 4355.7	16.3 -4	32.0
850.0 4952.6	15.4 -4	34.0
800.4 6619.0	13.0 -1.3	37.0
735.4 8932.5	7.0 -3.0	49.0
708.4 9930.6	4.3 -3.2	58.0
700.0 10258.0	4.4 -3.4	57.0
663.6 11682.5	2.3 -7.0	50.0
620.0 13475.2	-1.6 -9.0	57.0
586.2 14933.6	-5.3 -9.7	71.0
536.6 17196.8	-10.3 -11.3	92.0
519.0 18044.5	-9.0 -14.2	88.0
500.0 18991.9	-10.5 -17.6	55.0
472.0 20444.5	-13.0 -21.0	51.0
464.4 20851.5	-13.2 -22.1	47.0
434.4 22514.1	-16.7 -25.8	45.0
427.0 22938.5	-17.2 -27.3	41.0
400.0 24540.0	-20.5 -31.3	37.0
324.4 29519.1	-32.8 -44.1	31.0
300.0 31310.8	-38.3 -49.0	31.0
258.4 34623.1	-47.9	
250.0 35338.6	-49.6	
231.0 37025.5	-54.3	
211.2 38995.0	-59.6	
200.0 40015.7	-60.5	
177.6 42441.3	-62.7	
169.0 43454.5	-60.7	
164.6 43995.6	-60.7	
150.0 45985.4	-64.2	
124.2 49642.7	-69.9	
109.8 52059.7	-70.4	
100.0 53910.8	-66.1	
89.8 56077.9	-63.4	
74.4 59849.4	-68.2	
71.4 60673.9	-63.8	
70.0 61075.9	-62.7	
57.2 65183.8	-63.0	
50.0 67933.8	-60.8	
32.0 77314.4	-51.3	
30.0 78700.4	-51.6	



GEODOLITE COORDINATES  
 32.41043 LAT DEG  
 106.57833 LONG DEG

SIGNIFICANT LEVEL DATA  
 0700020089  
 WHITE SANDS

TABLE 14 Cont'd

STATION ALTITUDE 3489.0 FEET MSL  
 11 MAR. 82 0827 HRS MST  
 ASCENSION NO. 89

PRESSURE, GEOMETRICAL ALTITUDE MILLIBARS, MSL FEET	TEMPERATURE		RELATIVITY PERCENT
	AIR	DEWPOINT DEGREES CENTIGRADE	
23.6 83874.9	-49.6		
20.6 86823.0	-49.3		
20.0 87467.3	-47.4		
18.0 89786.4	-44.9		
15.0 93871.5	-39.4		

STATION ALTITUDE 3989.0 FEET MSL  
11 MAR. 62 0827 HRS MST  
ASCENSION NO. 09

UPPER AIR DATA  
0700020085  
WHITE SANDS

GEODTIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

TABLE 15

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND M/SEC	WIND DATA DIRECTION SPEED KNOTS	INDEX OF REFRACTION
3989.0	879.9	15.4	41.0	1059.0	062.6	0.0	1.000269
4000.0	879.6	15.4	40.7	1058.5	062.8	0.0	1.000268
4500.0	863.9	10.1	32.5	1037.8	063.4	1.7	1.000258
5000.0	846.5	15.3	34.1	1022.0	062.0	3.3	1.000255
5500.0	833.4	14.6	35.0	1006.2	061.7	4.9	1.000251
6000.0	810.5	13.9	35.9	990.7	060.9	7.0	1.000247
6500.0	803.8	13.2	36.0	975.5	060.1	9.4	1.000243
7000.0	789.3	12.0	39.0	961.7	059.7	9.5	1.000240
7500.0	775.0	10.7	41.6	946.6	059.2	9.9	1.000237
8000.0	760.9	9.4	44.2	935.7	058.7	11.1	1.000233
8500.0	747.1	8.1	46.0	923.0	058.2	13.3	1.000230
9000.0	733.6	6.8	49.6	910.5	057.7	16.9	1.000227
9500.0	720.0	5.5	54.1	898.0	057.1	19.6	1.000224
10000.0	706.8	4.3	57.8	885.1	056.8	22.1	1.000221
10500.0	693.7	4.0	55.8	869.6	056.4	25.4	1.000216
11000.0	680.8	3.3	53.4	855.9	056.5	29.2	1.000211
11500.0	668.2	2.6	50.9	842.4	056.0	34.2	1.000206
12000.0	655.7	1.6	51.2	829.6	056.4	39.1	1.000202
12500.0	643.3	0.5	53.2	817.3	056.1	43.0	1.000199
13000.0	631.3	-0.6	55.1	805.2	056.8	47.1	1.000196
13500.0	619.4	-1.7	57.2	793.3	056.5	48.0	1.000193
14000.0	607.6	-2.9	62.0	781.9	056.0	48.6	1.000190
14500.0	596.1	-4.2	66.8	770.6	055.5	48.0	1.000187
15000.0	584.7	-5.4	71.6	759.4	055.0	47.2	1.000185
15500.0	573.4	-6.6	76.3	747.8	055.7	46.4	1.000182
16000.0	562.3	-7.7	80.9	736.4	055.4	45.8	1.000179
16500.0	551.4	-8.8	85.5	725.2	055.0	45.6	1.000176
17000.0	540.7	-9.9	90.2	714.2	054.7	46.3	1.000173
17500.0	530.2	-9.8	82.7	700.3	054.7	47.1	1.000169
18000.0	519.9	-9.1	67.4	684.8	053.6	46.0	1.000164
18500.0	509.8	-9.7	60.7	673.3	053.7	49.2	1.000160
19000.0	499.8	-10.5	55.0	662.2	053.7	50.7	1.000156
19500.0	490.6	-11.4	53.6	651.4	053.7	51.6	1.000153
20000.0	480.4	-12.2	52.2	640.6	052.8	51.9	1.000150
20500.0	471.0	-13.0	50.5	630.1	052.8	53.6	1.000147
21000.0	461.6	-13.5	46.8	619.9	052.0	56.8	1.000144
21500.0	452.5	-14.6	46.2	609.1	052.7	58.7	1.000141
22000.0	443.5	-15.6	45.6	599.5	052.4	59.9	1.000138
22500.0	434.6	-16.7	45.0	590.0	052.1	56.4	1.000136
23000.0	425.9	-17.3	40.8	579.7	053.5	52.2	1.000133

STATION ALTITUDE 3989.10 FEET, SL  
11 MAR. 42 0827 HRS. PST  
ASCENSION I.O. 89

UPPER AIR DATA  
070002008,  
WHITE SANDS

STATION ALTITUDE 3989.10 FEET, SL  
11 MAR. 42 0827 HRS. PST  
ASCENSION I.O. 89

STATION ALTITUDE 3989.10 FEET, SL  
11 MAR. 42 0827 HRS. PST  
ASCENSION I.O. 89

TABLE 15 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	TEMPERATURE AIR DEGREES FAHRENHEIT	EL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	WIND DIRECTION (TRUE)	WIND SPEED KNOTS	INDEX OF REFRACTION
23500.0	417.5	-18.4	-28.7	39.6	570.3	322.0	282.6	50.9	1.000130
24000.0	408.9	-19.4	-30.0	38.3	561.1	320.7	283.7	49.7	1.000128
24500.0	400.7	-20.4	-31.2	37.1	552.0	319.5	285.2	49.5	1.000126
25000.0	392.3	-21.6	-32.5	36.4	543.2	318.0	286.6	49.3	1.000123
25500.0	384.2	-22.9	-33.8	35.8	534.5	316.4	288.0	49.0	1.000121
26000.0	376.2	-24.1	-35.1	35.2	526.0	314.9	290.2	50.3	1.000119
26500.0	368.3	-25.3	-36.4	34.6	517.7	313.4	290.9	52.9	1.000117
27000.0	360.7	-26.6	-37.6	34.0	509.4	311.6	291.4	55.9	1.000115
27500.0	353.2	-27.8	-38.9	33.4	501.4	310.3	291.9	58.8	1.000113
28000.0	345.8	-29.0	-40.2	32.8	493.4	308.7	292.3	59.7	1.000111
28500.0	338.6	-30.3	-41.5	32.2	485.6	307.2	292.7	60.3	1.000109
29000.0	331.6	-31.5	-42.8	31.6	477.9	305.6	292.5	59.8	1.000107
29500.0	324.7	-32.8	-44.0	31.0	470.4	304.1	292.4	59.3	1.000106
30000.0	317.7	-34.3	-45.4	31.0	463.2	302.2	292.4	58.9	1.000104
30500.0	310.8	-35.8	-46.8	31.0	456.2	300.2	292.6	58.2	1.000102
31000.0	304.1	-37.3	-48.2	31.0	449.2	298.3	293.9	57.2	1.000101
31500.0	297.5	-38.8	-50.0	29.2**	442.2	296.3	295.2	55.9	1.000099
32000.0	290.8	-40.3	-52.8	24.6**	435.1	294.5	296.5	54.1	1.000097
32500.0	284.3	-41.7	-55.7	19.9**	428.0	292.6	296.7	54.7	1.000096
33000.0	277.8	-43.2	-59.1	15.2**	421.2	290.8	296.4	56.3	1.000094
33500.0	271.8	-44.6	-63.1	10.5**	414.4	289.9	296.6	61.0	1.000092
34000.0	265.8	-46.1	-68.5	5.8**	407.7	287.0	295.9	65.4	1.000091
34500.0	259.8	-47.5	-80.0	1.2**	401.2	285.2	296.6	67.9	1.000089
35000.0	253.9	-48.8			394.3	283.5	296.7	68.2	1.000088
35500.0	248.1	-50.0			387.4	281.9	295.8	67.6	1.000086
36000.0	242.4	-51.4			380.8	280.1	294.6	67.8	1.000085
36500.0	236.8	-52.8			374.4	278.3	293.9	65.2	1.000083
37000.0	231.3	-54.2			368.0	276.4	294.1	62.5	1.000082
37500.0	225.8	-55.6			361.7	274.6	294.6	60.3	1.000081
38000.0	220.5	-57.1			355.4	272.7	294.5	59.7	1.000079
38500.0	215.2	-58.5			349.3	270.8	293.1	63.0	1.000078
39000.0	210.1	-59.7			342.9	269.2	291.5	66.5	1.000076
39500.0	205.1	-60.1			335.3	268.7	289.6	70.2	1.000075
40000.0	200.2	-60.5			327.9	266.1	287.6	73.7	1.000073
40500.0	195.3	-60.9			320.6	267.5	286.1	76.4	1.000071
41000.0	190.6	-61.4			313.5	265.9	284.6	79.1	1.000070
41500.0	186.0	-61.8			306.6	264.3	283.0	81.1	1.000068
42000.0	181.5	-62.3			299.8	262.7	281.1	83.0	1.000067
42500.0	177.1	-62.6			293.0	261.1	280.0	83.6	1.000065
43000.0	172.8	-63.6			284.6	260.6	282.9	84.2	1.000063

\*\* AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE CALCULATION.

STATION ALTITUDE 598.00 FEET .SL  
11 MAR. 62 0827 HRS PST  
ASCENSION NO. 89

UPPER AIR DATA  
070002006,  
WHITE SANDS  
TABLE 15 Cont'd

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND M/SEC	WIND DATA DIRECTION DEGREES (IN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	160.6	-60.7		270.5	567.8	283.3	83.0	1.000022
44000.0	160.6	-60.7		269.9	567.8	283.7	81.6	1.000020
44500.0	160.6	-61.6		264.5	560.6	285.1	80.1	1.000039
45000.0	150.7	-62.6		259.2	565.3	287.0	78.5	1.000054
45500.0	152.9	-63.5		254.0	564.1	288.9	77.3	1.000057
46000.0	149.1	-64.4		248.9	562.9	290.8	76.3	1.000055
46500.0	145.4	-65.1		243.6	561.9	292.4	75.0	1.000054
47000.0	141.8	-65.9		238.4	560.9	292.8	71.8	1.000053
47500.0	138.3	-66.6		233.3	559.6	293.3	68.6	1.000052
48000.0	134.9	-67.4		228.4	558.8	291.6	66.8	1.000051
48500.0	131.5	-68.2		223.5	557.8	289.8	65.1	1.000050
49000.0	128.3	-68.9		218.8	556.7	287.6	65.7	1.000049
49500.0	125.1	-69.7		214.2	555.7	285.7	67.0	1.000048
50000.0	122.0	-70.0		209.1	555.3	284.6	67.1	1.000047
50500.0	118.9	-70.1		203.9	555.2	284.0	66.1	1.000045
51000.0	115.9	-70.2		198.9	555.0	284.7	64.7	1.000044
51500.0	113.0	-70.3		194.0	554.9	285.5	62.6	1.000043
52000.0	110.1	-70.4		189.2	554.7	286.4	60.2	1.000042
52500.0	107.4	-69.4		183.6	550.1	287.0	54.9	1.000041
53000.0	104.7	-68.2		178.0	557.7	287.7	49.7	1.000040
53500.0	102.1	-67.1		172.6	554.3	288.1	40.7	1.000038
54000.0	99.6	-66.0		167.4	560.7	288.6	31.1	1.000037
54500.0	97.1	-65.4		162.8	561.6	288.7	25.0	1.000036
55000.0	94.7	-64.7		158.4	562.4	288.0	21.6	1.000035
55500.0	92.4	-64.1		154.0	563.2	287.2	19.4	1.000034
56000.0	90.1	-63.5		149.8	564.1	286.6	20.5	1.000033
56500.0	87.9	-63.9		146.4	563.5	286.0	21.6	1.000033
57000.0	85.8	-64.6		143.2	562.6	285.1	21.2	1.000032
57500.0	83.7	-65.2		140.1	561.8	284.0	20.4	1.000031
58000.0	81.6	-65.8		137.1	560.9	283.0	18.8	1.000031
58500.0	79.6	-66.5		134.1	560.1	282.1	15.4	1.000030
59000.0	77.6	-67.1		131.2	559.2	280.7	12.1	1.000029
59500.0	75.7	-67.4		128.4	558.3	280.5	7.9	1.000029
60000.0	73.8	-67.4		125.0	558.8	306.6	4.0	1.000028
60500.0	72.0	-67.7		120.4	562.4	343.7	3.8	1.000027
61000.0	70.3	-62.9		116.4	564.9	350.1	5.9	1.000026
61500.0	68.6	-62.7		113.5	565.1	351.2	8.1	1.000025
62000.0	66.9	-62.8		110.8	565.1	342.5	10.5	1.000025
62500.0	65.3	-62.8		108.1	565.0	356.9	13.1	1.000024
63000.0	63.7	-62.8		105.5	565.0	359.4	12.9	1.000023

STATION ALTITUDE 3989.00 FEET  
 11 MAR. 62 0827 HRS  
 ASCENDING 10. 09

UPPER AIR DATA  
 0700020009  
 WHITE SANDS  
 TABLE 15 Cont'd

STATION ALTITUDE 3989.00 FEET  
 11 MAR. 62 0827 HRS  
 ASCENDING 10. 09

UPPER AIR DATA  
 0700020009  
 WHITE SANDS  
 TABLE 15 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND M/SEC	WIND DIRECTION DEGREES (T)	WIND SPEED M/SEC	INCL UP REFLECTION
63500.0	62.1	-12.9		102.9	364.9	345.1	11.8	1.000023
64000.0	60.6	-12.9		100.5	364.9	355.7	10.2	1.000022
64500.0	59.2	-13.0		98.0	364.3	21.6	8.1	1.000022
65000.0	57.7	-13.0		95.7	364.8	53.9	8.4	1.000021
65500.0	56.3	-12.7		93.3	363.1	63.4	7.4	1.000021
66000.0	55.0	-12.3		90.8	363.0	79.1	6.6	1.000020
66500.0	53.6	-11.9		88.5	360.2	86.9	3.9	1.000020
67000.0	52.3	-11.5		86.2	360.7	25.1	.6	1.000019
67500.0	51.1	-11.1		83.9	361.2	264.0	4.8	1.000019
68000.0	49.8	-10.7		81.7	367.8	265.2	7.4	1.000018
68500.0	48.7	-10.2		79.6	365.5	265.8	10.0	1.000018
69000.0	47.5	-9.7		77.6	363.1	263.0	10.1	1.000017
69500.0	46.4	-9.2		75.6	369.8	257.9	9.0	1.000017
70000.0	45.3	-8.7		73.6	370.5	251.9	7.9	1.000016
70500.0	44.3	-8.2		71.7	371.2	245.7	6.5	1.000016
71000.0	43.2	-7.7		69.9	371.8	236.3	5.3	1.000016
71500.0	42.2	-7.2		68.1	372.5	237.1	4.6	1.000015
72000.0	41.2	-6.7		66.3	373.2	245.0	4.2	1.000015
72500.0	40.2	-6.2		64.6	373.9	256.0	4.1	1.000014
73000.0	39.3	-5.7		62.9	374.5	267.4	4.6	1.000014
73500.0	38.4	-5.2		61.3	375.2	270.5	5.3	1.000014
74000.0	37.5	-4.7		59.7	375.9	280.9	7.2	1.000013
74500.0	36.6	-4.2		58.2	376.5	282.7	9.7	1.000013
75000.0	35.7	-3.6		56.7	377.2	283.6	12.4	1.000013
75500.0	34.9	-3.1		55.2	377.9	283.0	15.7	1.000012
76000.0	34.1	-2.6		53.8	378.5	282.7	19.0	1.000012
76500.0	33.3	-2.1		52.4	379.2	282.0	21.6	1.000012
77000.0	32.5	-1.6		51.1	379.8	281.1	23.6	1.000011
77500.0	31.7	-1.3		49.8	380.2	280.4	25.6	1.000011
78000.0	31.0	-1.4		48.7	380.1	279.2	25.4	1.000011
78500.0	30.3	-1.6		47.6	379.9	278.0	24.9	1.000011
79000.0	29.6	-1.5		46.5	380.0	276.5	24.2	1.000010
79500.0	28.9	-1.3		45.4	380.3	272.9	21.6	1.000010
80000.0	28.2	-1.1		44.3	380.5	268.5	19.2	1.000010
80500.0	27.6	-1.0		43.3	380.6	262.4	17.4	1.000010
81000.0	27.0	-0.7		42.2	381.0	255.4	16.7	1.000009
81500.0	26.3	-0.5		41.2	381.3	247.9	16.3	1.000009
82000.0	25.7	-0.3		40.2	381.5	245.6	17.7	1.000009
82500.0	25.2	-0.1		39.3	381.8	247.3	20.1	1.000009
83000.0	24.6	-0.9		38.4	382.0	246.4	22.6	1.000009

GEOL. COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

UPPER AIR DATA  
0700020085  
WHITE SANDS

TABLE 15 Cont'd

STATION ALTITUDE 3489.00 FEET SL  
11 MAR. 62 0827 HRS MST  
ASCENSION NO. 09

GEOMETRIC ALTITUDE ASL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	ELAPSED PERCENT	DENSITY GM/CUBIC METER	WIND SPEED KNOTS	WIND DIRECTION DEGREES (IN)	WIND SPEED KNOTS	WIND DIRECTION DEGREES (IN)	WIND SPEED KNOTS	WIND DIRECTION DEGREES (IN)
03500.0	24.0	-49.7		37.4	582.3	251.0	24.0	1.000000		
04000.0	23.5	-49.6		30.0	582.5	255.2	26.7	1.000000		
04500.0	22.9	-49.5		35.7	582.0	257.9	26.6	1.000000		
05000.0	22.4	-49.5		34.9	582.6	250.1	26.0	1.000000		
05500.0	21.9	-49.4		34.1	582.7	258.3	23.3	1.000000		
06000.0	21.4	-49.4		33.3	582.8	257.5	20.2	1.000000		
06500.0	20.9	-49.3		32.5	582.8	253.2	15.7	1.000000		
07000.0	20.4	-48.8		31.7	583.0	245.6	11.5	1.000000		
07500.0	20.0	-47.4		30.8	583.4	238.2	10.0	1.000000		
08000.0	19.5	-46.8		30.0	583.1	233.6	10.1	1.000000		
08500.0	19.1	-46.3		29.3	583.0	230.0	10.5	1.000000		
09000.0	18.7	-45.7		28.6	587.5	235.1	12.3	1.000000		
09500.0	18.2	-45.2		27.9	587.2	238.4	14.1	1.000000		
10000.0	17.8	-44.6		27.2	588.9	239.5	15.8	1.000000		
10500.0	17.4	-43.9		26.5	589.8	239.0	17.4	1.000000		
11000.0	17.1	-43.3		25.8	590.7	240.2	19.1	1.000000		
11500.0	16.7	-42.6		25.2	591.5	242.0	21.7	1.000000		
12000.0	16.3	-41.9		24.0	592.4	244.0	24.4	1.000000		
12500.0	15.9	-41.2		23.4	593.3			1.000000		
13000.0	15.6	-40.6		23.4	594.1			1.000000		
13500.0	15.3	-39.9		22.8	595.0			1.000000		

STATION ALTITUDE 3,890.0 FEET SL  
11 MAR. 62 0827 HRS, MST  
ASCENSION NO. 89

MANDATORY LEVELS  
0700020000  
WHITE SANDS

GEODETIC COORDINATES  
12.40043 LAT DEG  
106.37033 LONG DEG

TABLE 16

PRESSURE MILLIBARS	GELOIDHTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMID. PERCENT	WIND DATA	
				DIRECTION DEGREES (TN)	SPEED KNOTS
150.0	4949.	15.4	34.	320.8	5.1
100.0	6627.	13.0	37.	327.5	9.5
750.0	8332.	8.4	40.	313.1	12.7
700.0	10248.	4.4	57.	264.0	23.7
650.0	12218.	1.1	52.	267.4	41.1
600.0	14314.	-3.8	63.	263.1	40.2
550.0	16548.	-10.9	40.	255.3	45.7
500.0	18965.	-10.5	55.	270.0	50.7
450.0	21605.	-14.0	40.	261.7	59.0
400.0	24499.	-20.5	37.	285.3	49.5
350.0	27672.	-20.3	33.	292.1	54.2
300.0	31248.	-38.3	31.	294.0	50.6
250.0	35261.	-40.6		296.4	67.9
200.0	39419.	-60.5		207.8	73.7
175.0	42633.	-62.1		282.9	63.9
150.0	45762.	-64.2		290.2	70.6
125.0	49375.	-60.7		265.8	67.0
100.0	53745.	-66.1		288.5	53.4
80.0	58213.	-66.3		262.4	10.2
70.0	60867.	-62.7		350.5	0.1
60.0	63983.	-62.9		3.7	9.2
50.0	67679.	-60.8		205.0	0.9
40.0	72284.	-58.1		256.9	4.1
30.0	78365.	-51.6		277.5	24.8
25.0	82260.	-50.1		247.5	20.5
20.0	87058.	-47.4		238.9	10.0
15.0	93404.	-30.4			

FILMED  
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